

May 14, 1949.

Dear Francis,

You may remember mentioning a <sup>pre-</sup>medical student named Zinder or something like that as a possible good candidate for a year's work here under an assistantship. Is he interested? I haven't heard from him.

The mutants get to be more complicated all the time. A temperature sensitive allele of  $\text{Lac}_3$  has been found which is  $\text{Lac-Glu-Sorbitol-}$  at  $40^\circ$  (as  $\text{Lac}_3-$  is at all temperatures) but is  $++$  at 30. At 32 it is  $++$ , at 36 it is  $+$  ! This certainly seems to be a pleiotropic mutation in every sense of the term. I don't see how it is going to be possible to ascertain the primary effect of the gene, but something may turn up.

Vital dyes for coli might interest you in facilitating observation of microcolonies. The redox indicator 2,3,5 triphenyltetrazolium chloride may be a good bet. In the presence of an oxidisable substrate, coli cells reduce this colorless compound to the red, insoluble formazan derivative, and for reasons yet unknown accumulate the pigment in (usually) a single granule near one end of the cell. The microscopic picture is very striking! You can get the compound as "T-21" reagent from Paul Lewis Laboratories, 4253 N. Pt. Washington Road, Milwaukee 12. They probably will be glad to give you a gram or so gratis. Even merely as an enzyme indicator, this compound probably has very good potentialities.

Best regards,

Joshua Lederberg